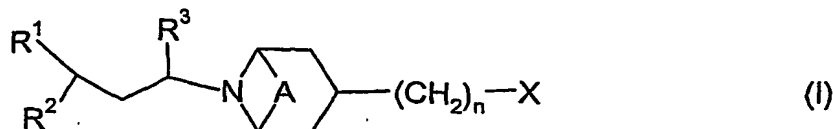


CLAIMS

1. A compound of formula (I):



5 wherein:

A is absent or is (CH₂)₂;

R¹ is C(O)NR¹⁰R¹¹, C(O)₂R¹², NR¹³C(O)R¹⁴, NR¹⁵C(O)NR¹⁶R¹⁷, NR¹⁸C(O)₂R¹⁹, heterocyclyl (for example piperidine, piperazine, pyrrolidine or azetidine), aryl, cycloalkyl or heteroaryl;

10 R¹⁰, R¹³, R¹⁵, R¹⁶ and R¹⁸ are hydrogen or C₁₋₆ alkyl;

R¹¹, R¹², R¹⁴, R¹⁷ and R¹⁹ are C₁₋₈ alkyl (optionally substituted by halo, hydroxy, C₁₋₆ alkoxy, C₁₋₆ haloalkoxy, C₃₋₆ cycloalkyl (optionally substituted by halo), C₅₋₆ cycloalkenyl, S(C₁₋₄ alkyl), S(O)(C₁₋₄ alkyl), S(O)₂(C₁₋₄ alkyl), heteroaryl, aryl, heteroaryloxy or aryloxy), aryl, heteroaryl, C₃₋₇ cycloalkyl (optionally substituted by halo or C₁₋₄ alkyl), C₄₋₇ cycloalkyl fused to a phenyl ring, C₅₋₇ cycloalkenyl, or, heterocyclyl (itself optionally substituted by oxo, C(O)(C₁₋₆ alkyl), S(O)_k(C₁₋₆ alkyl), halo or C₁₋₄ alkyl); or R¹¹, R¹², R¹⁴ and R¹⁷ can also be hydrogen; or R¹⁰ and R¹¹, and/or R¹⁶ and R¹⁷ may join to form a 4-, 5- or 6-membered ring which optionally includes a nitrogen, oxygen or sulphur atom, said ring being optionally substituted by C₁₋₆ alkyl, S(O)_i(C₁₋₆ alkyl) or C(O)(C₁₋₆ alkyl);

20 R² is phenyl, heteroaryl or C₃₋₇ cycloalkyl;

R³ is H or C₁₋₄ alkyl;

X is S(O)₂NR⁴R⁵ or NR⁶S(O)₂R⁷;

25 R⁷ is aryl, heteroaryl, C₁₋₆ alkyl, C₃₋₇ cycloalkyl, heterocyclyl or NR⁸R⁹ wherein NR⁸R⁹ can be cyclized to form a 4-, 5- or 6-membered ring which optionally includes a nitrogen, oxygen or sulphur atom, said ring being optionally substituted by C₁₋₆ alkyl, S(O)_p(C₁₋₆ alkyl) or C(O)(C₁₋₆ alkyl);

R⁴ and R⁸ are aryl, heteroaryl, C₁₋₆ alkyl (optionally substituted by hydroxy or C₁₋₆ alkoxy), C₃₋₇ cycloalkyl or heterocyclyl;

30 R⁵, R⁶ and R⁹ are, independently, hydrogen or C₁₋₆ alkyl;

n is 1, 2 or 3;

aryl, phenyl and heteroaryl moieties are independently optionally substituted by one or more of halo, cyano, nitro, hydroxy, $\text{OC(O)NR}^{20}\text{R}^{21}$, $\text{NR}^{22}\text{R}^{23}$, $\text{NR}^{24}\text{C(O)R}^{25}$, $\text{NR}^{26}\text{C(O)NR}^{27}\text{R}^{28}$, $\text{S(O)}_2\text{NR}^{29}\text{R}^{30}$, $\text{NR}^{31}\text{S(O)}_2\text{R}^{32}$, $\text{C(O)NR}^{33}\text{R}^{34}$, CO_2R^{36} , $\text{NR}^{37}\text{CO}_2\text{R}^{38}$, $\text{S(O)}_q\text{R}^{39}$, $\text{OS(O)}_2\text{R}^{49}$, C_{1-6} alkyl (optionally mono-substituted by $\text{S(O)}_2\text{R}^{50}$ or $\text{C(O)NR}^{51}\text{R}^{52}$), C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-10} cycloalkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy(C_{1-6})alkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, phenyl, phenyl(C_{1-4})alkyl, phenoxy, phenylthio, phenylS(O), phenylS(O)₂, phenyl(C_{1-4})alkoxy, heteroaryl, heteroaryl(C_{1-4})alkyl, heteroaryloxy or heteroaryl(C_{1-4})alkoxy; wherein any of the immediately foregoing phenyl and heteroaryl moieties are optionally substituted with halo, hydroxy, nitro, S(C_{1-4} alkyl), S(O)(C_{1-4} alkyl), $\text{S(O)}_2(\text{C}_{1-4}$ alkyl), $\text{S(O)}_2\text{NH}_2$, $\text{S(O)}_2\text{NH}(\text{C}_{1-4}$ alkyl), $\text{S(O)}_2\text{N}(\text{C}_{1-4}$ alkyl)₂, cyano, C_{1-4} alkyl, C_{1-4} alkoxy, C(O)NH_2 , $\text{C(O)NH}(\text{C}_{1-4}$ alkyl), $\text{C(O)N}(\text{C}_{1-4}$ alkyl)₂, CO_2H , $\text{CO}_2(\text{C}_{1-4}$ alkyl), $\text{NHC(O)}(\text{C}_{1-4}$ alkyl), $\text{NHS(O)}_2(\text{C}_{1-4}$ alkyl), CF_3 or OCF_3 ;

unless otherwise stated heterocyclyl is optionally substituted by C_{1-6} alkyl [optionally substituted by phenyl {which itself optionally substituted by halo, C_{1-4} alkyl, C_{1-4} alkoxy, cyano, nitro, CF_3 , OCF_3 , (C_{1-4} alkyl) C(O)NH , $\text{S(O)}_2\text{NH}_2$, C_{1-4} alkylthio, $\text{S(O)}(\text{C}_{1-4}$ alkyl) or $\text{S(O)}_2(\text{C}_{1-4}$ alkyl)} or heteroaryl {which itself optionally substituted by halo, C_{1-4} alkyl, C_{1-4} alkoxy, cyano, nitro, CF_3 , (C_{1-4} alkyl) C(O)NH , $\text{S(O)}_2\text{NH}_2$, C_{1-4} alkylthio, $\text{S(O)}(\text{C}_{1-4}$ alkyl) or $\text{S(O)}_2(\text{C}_{1-4}$ alkyl)}], phenyl {optionally substituted by halo, C_{1-4} alkyl, C_{1-4} alkoxy, cyano, nitro, CF_3 , OCF_3 , (C_{1-4} alkyl) C(O)NH , $\text{S(O)}_2\text{NH}_2$, C_{1-4} alkylthio, $\text{S(O)}(\text{C}_{1-4}$ alkyl) or $\text{S(O)}_2(\text{C}_{1-4}$ alkyl)}, heteroaryl {optionally substituted by halo, C_{1-4} alkyl, C_{1-4} alkoxy, cyano, nitro, CF_3 , (C_{1-4} alkyl) C(O)NH , $\text{S(O)}_2\text{NH}_2$, C_{1-4} alkylthio, $\text{S(O)}(\text{C}_{1-4}$ alkyl) or $\text{S(O)}_2(\text{C}_{1-4}$ alkyl)}, $\text{S(O)}_2\text{NR}^{40}\text{R}^{41}$, C(O)R^{42} , $\text{C(O)}_2(\text{C}_{1-6}$ alkyl) (such as tert-butoxycarbonyl), $\text{C(O)}_2(\text{phenyl}(\text{C}_{1-2}$ alkyl)) (such as benzyloxycarbonyl), C(O)NHR^{43} , $\text{S(O)}_2\text{R}^{44}$, $\text{NHS(O)}_2\text{NHR}^{45}$, NHC(O)R^{46} , NHC(O)NHR^{47} or $\text{NHS(O)}_2\text{R}^{48}$, provided none of these last four substituents is linked to a ring nitrogen;

k, l, p and q are, independently, 0, 1 or 2;

R^{20} , R^{22} , R^{24} , R^{26} , R^{27} , R^{29} , R^{31} , R^{33} , R^{37} , R^{40} and R^{51} are, independently, hydrogen or C_{1-6} alkyl;

R^{21} , R^{23} , R^{25} , R^{28} , R^{30} , R^{32} , R^{34} , R^{36} , R^{38} , R^{39} , R^{41} , R^{42} , R^{43} , R^{44} , R^{45} , R^{46} , R^{47} , R^{48} ,

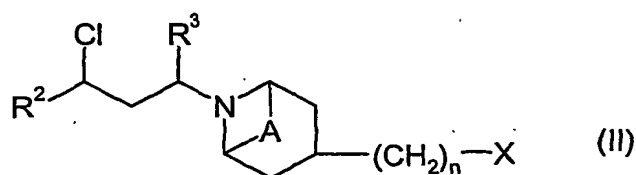
R^{49} , R^{50} and R^{52} are, independently, C_{1-6} alkyl (optionally substituted by halo, hydroxy,

C₁₋₆ alkoxy, C₁₋₆ haloalkoxy, C₃₋₆ cycloalkyl, C₅₋₆ cycloalkenyl, S(C₁₋₄ alkyl), S(O)(C₁₋₄ alkyl), S(O)₂(C₁₋₄ alkyl), heteroaryl, phenyl, heteroaryloxy or phenyloxy), C₃₋₇ cycloalkyl, phenyl or heteroaryl; wherein any of the immediately foregoing phenyl and heteroaryl moieties are optionally substituted with halo, hydroxy, nitro, S(C₁₋₄ alkyl), S(O)(C₁₋₄ alkyl), S(O)₂(C₁₋₄ alkyl), S(O)₂NH₂, S(O)₂NH(C₁₋₄ alkyl), S(O)₂N(C₁₋₄ alkyl)₂, cyano, C₁₋₄ alkyl, C₁₋₄ alkoxy, C(O)NH₂, C(O)NH(C₁₋₄ alkyl), C(O)N(C₁₋₄ alkyl)₂, CO₂H, CO₂(C₁₋₄ alkyl), NHC(O)(C₁₋₄ alkyl), NHS(O)₂(C₁₋₄ alkyl), C(O)(C₁₋₄ alkyl), CF₃ or OCF₃;
 R²¹, R²³, R²⁵, R²⁸, R³⁰, R³⁴, R³⁵, R³⁶, R⁴¹, R⁴², R⁴³, R⁴⁵, R⁴⁶, R⁴⁷ and R⁵² may additionally be hydrogen;
 or a pharmaceutically acceptable salt thereof or a solvate thereof.

2. A compound as claimed in claim 1 wherein A is absent.
3. A compound as claimed in claim 1 or 2 wherein n is 1 or 2.
4. A compound as claimed in claim 1, 2 or 3 wherein R³ is hydrogen.
5. A compound as claimed in claim 1, 2, 3 or 4 wherein R¹ is NR¹³C(O)R¹⁴; wherein R¹³ and R¹⁴ are as defined in claim 1.
6. A compound as claimed in claim 1, 2, 3 or 4 wherein R¹ is optionally substituted aryl or optionally substituted heteroaryl, wherein the optional substituents are as recited in claim 1.
7. A compound as claimed in claim 1, 2, 3 or 4 wherein R¹ is optionally substituted heterocyclyl.
8. A compound as claimed in any one of the preceding claims wherein R² is phenyl optionally substituted by halo or CF₃.
9. A compound as claimed in any one of the preceding claims wherein X is NR⁶S(O)₂R⁷; wherein R⁶ and R⁷ are as defined in claim 1.

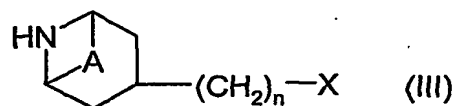
10. A compound as claimed in any one of the preceding claims wherein X is $S(O)_2NR^4R^5$; wherein R^4 and R^5 are as defined in claim 1.

5 11. A process for preparing a compound as claimed in claim 1, the process comprising:
a. when R^1 is an N-linked optionally substituted heterocycle, reacting a compound of formula (II):

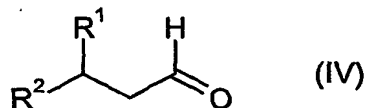


10 wherein R^2 , R^3 , n , A and X are as defined in claim 1, with a compound R^1H (wherein the H is on a heterocycle ring nitrogen atom) wherein R^1 is as defined above, in the presence of a suitable base, in a suitable solvent and optionally in the presence of sodium iodide;

b. when R^3 is hydrogen, coupling a compound of formula (III):

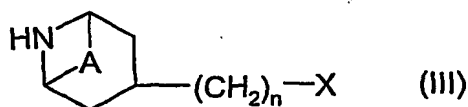


15 wherein n , A and X are as defined in claim 1, with a compound of formula (IV):

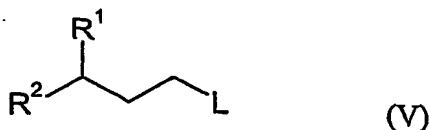


wherein R^1 and R^2 are as defined in claim 1, in the presence of $NaBH(OAc)_3$ in a suitable solvent at room temperature;

c. when R^3 is hydrogen, coupling a compound of formula (III):

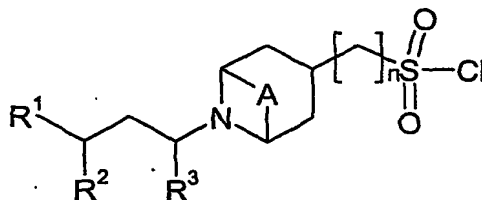


20 wherein n , A and X are as defined in claim 1, with a compound of formula (V):



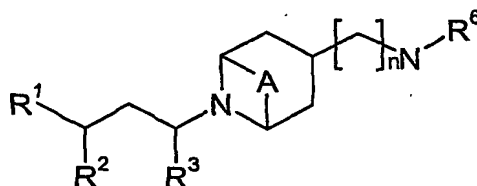
wherein R^1 and R^2 are as defined in claim 1 and L is a leaving group; in the presence of a base, in a suitable solvent at a temperature from 60°C up to the boiling point of the solvent;

- d. when X is $S(O)_2NR^4R^5$, reacting a compound:



wherein R^1 , R^2 , R^3 , A and n are as defined in claim 1, with NHR^4R^5 , wherein R^4 and R^5 are as defined in claim 1, in the presence of a suitable base and in the presence of a suitable solvent; or,

- e. when X is $NR^6S(O)_2NR^7$, reacting a compound:



wherein R^1 , R^2 , R^3 , A and n are as defined in claim 1, with $R^7S(O)_2Cl$, in the presence of a suitable base and in the presence of a suitable solvent.

12. A pharmaceutical composition which comprises a compound as claimed in claim 1, or a pharmaceutically acceptable salt thereof or solvate thereof, and a pharmaceutically acceptable adjuvant, diluent or carrier.
13. A compound as claimed in claim 1, or a pharmaceutically acceptable salt thereof or solvate thereof, for use as a medicament.
14. A compound as claimed in claim 1, or a pharmaceutically acceptable salt thereof or solvate thereof, in the manufacture of a medicament for use in therapy.
15. A method of treating a CCR5 mediated disease state comprising administering to a patient in need of such treatment an effective amount of a compound as claimed in claim 1, or a pharmaceutically acceptable salt thereof or solvate thereof.